
CMMI Requirements for Project Managers



Presented by
Robert J. Pomietto
March 23, 2005

Agenda

- **The premise of this Project Management session**
- **The five essentials for successful Project Management**
- **How does CMMI implement Project Management**
- **Project Management and Risk Management**
- **Summary**

CMMI® SW – Staged Representation

Level	Focus	Process Areas <i>Including IPPD</i>	
5 Optimizing	<i>Continuous Process Improvement</i>	Organizational Innovation and Deployment Causal Analysis and Resolution	
4 Quantitatively Managed	<i>Quantitative Management</i>	Organizational Process Performance Quantitative Project Management	
3 Defined	<i>Process Standardization</i>	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition Organizational Training Integrated Project Management Risk Management Decision Analysis and Resolution <i>Integrated Supplier Management</i>	
2 Managed	<i>Basic Project Management</i>	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Measurement and Analysis Process and Product Quality Assurance Configuration Management	
1 Initial			Risk Rework

Risk
Rework

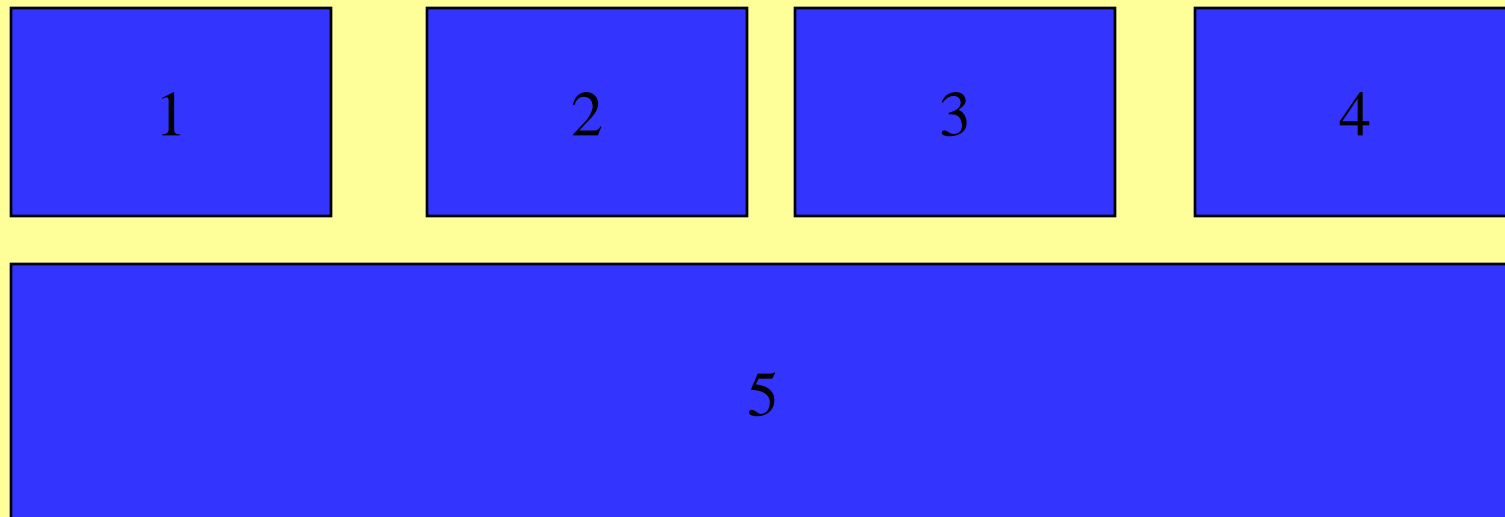
Project Planning helps to Facilitate Horizontal Teams

- **Project Management using the CMMI provides:**
 - A common vocabulary to facilitate intra-team communications and team and customer stakeholders
 - A common set of techniques for dealing with the internal and external stakeholders
 - A common set of expectations for all stakeholders at all points in the project life cycle

The premise for project management discipline using the CMMI model is the umbrella for meeting customer demands for delivery of a total, integrated solution

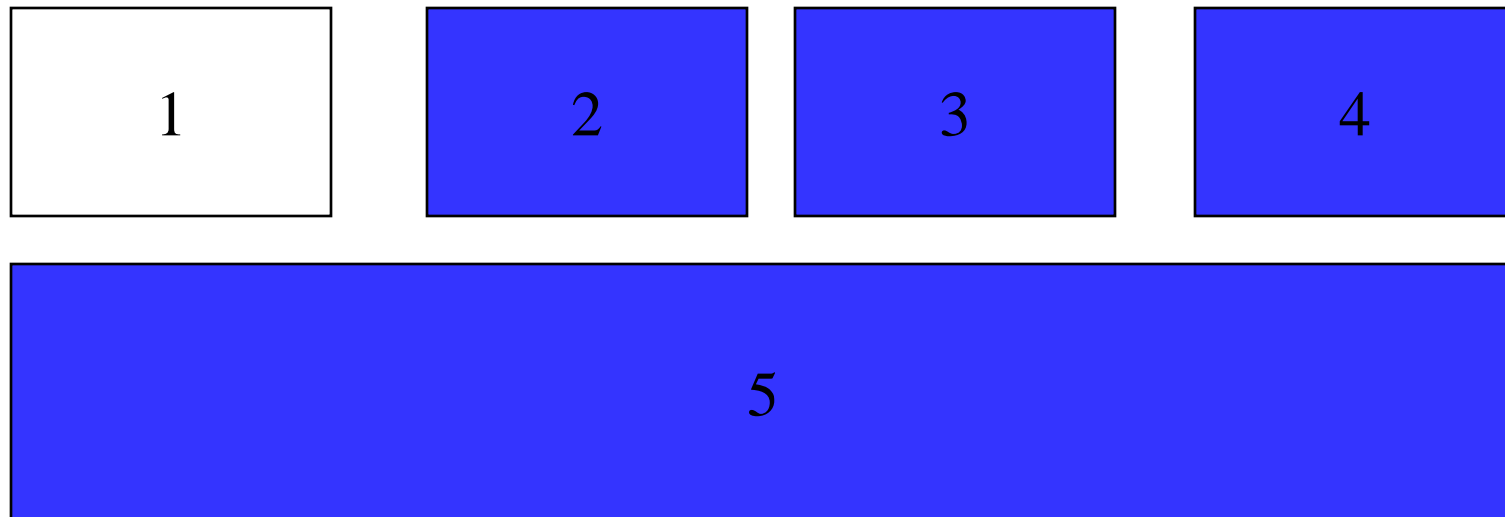
The Five Essentials of Project Management using the CMMI

The Five Essentials of Project Management from the CMMI perspective



The First Essential of Project Management from the CMMI perspective

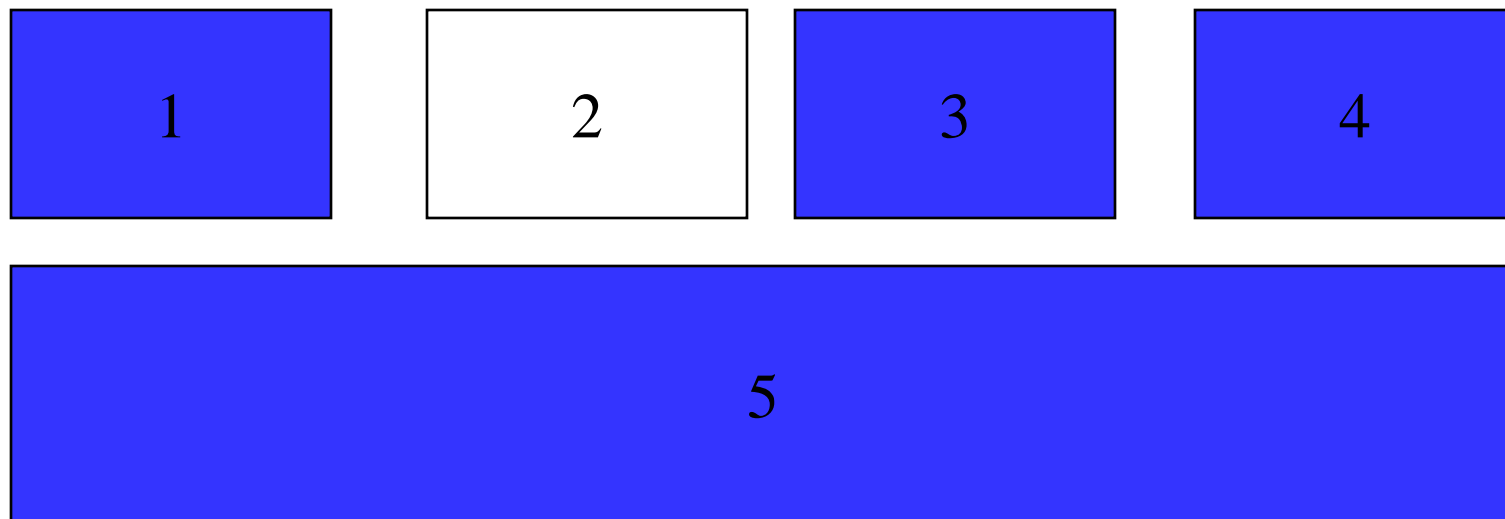
Common Vocabulary



Tailored for the stakeholders (internal and external) in the project environment

The Second Essential of Project Management from the CMMI perspective

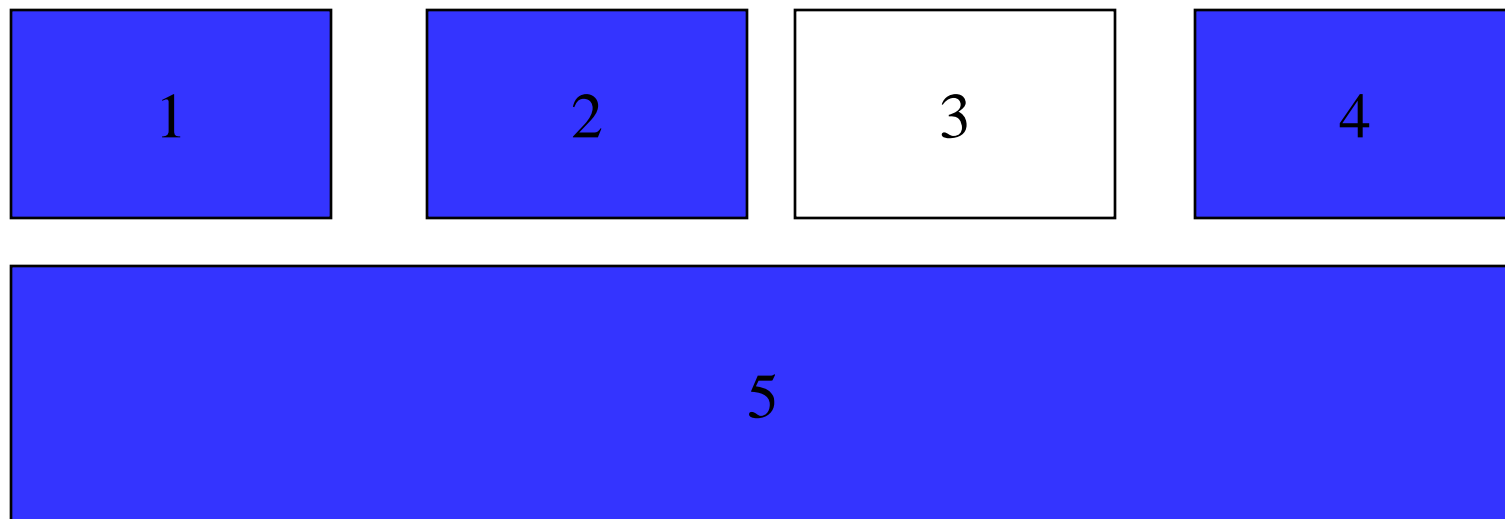
Teamwork



Concurrently timely involvement of stakeholders that include users, suppliers, operations and maintenance stakeholders- simply stated timely involvement of all relevant stakeholders

The Third Essential of Project Management from the CMMI perspective

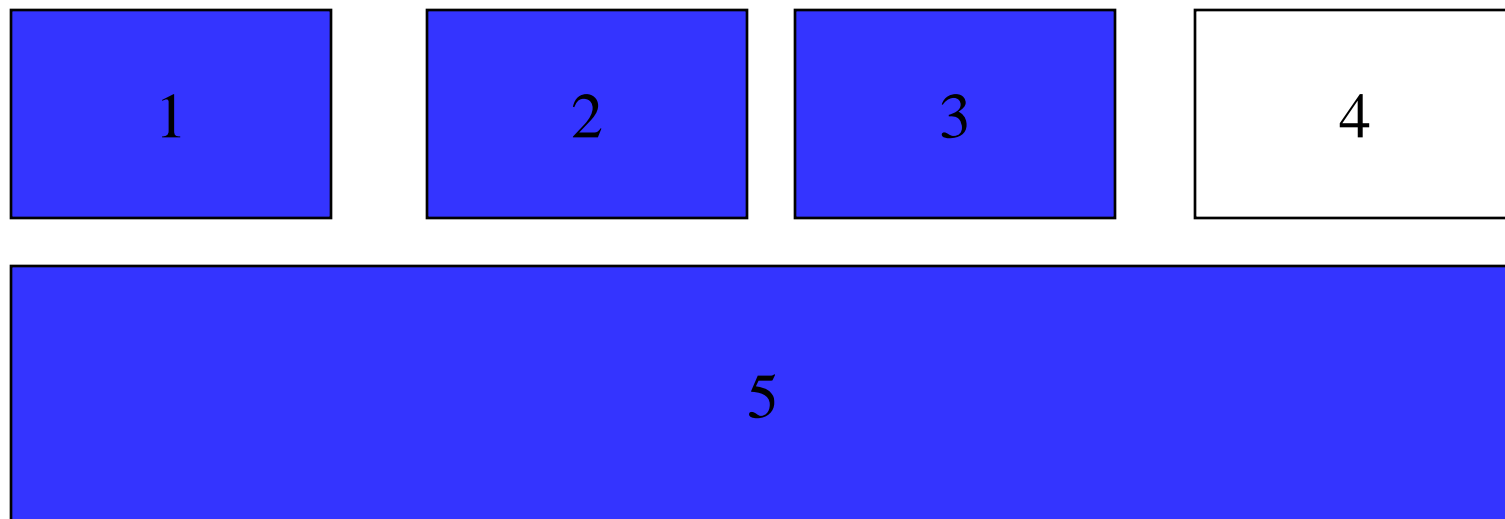
The Project Cycle



The sequential management approach to
achieving the overall project's objectives

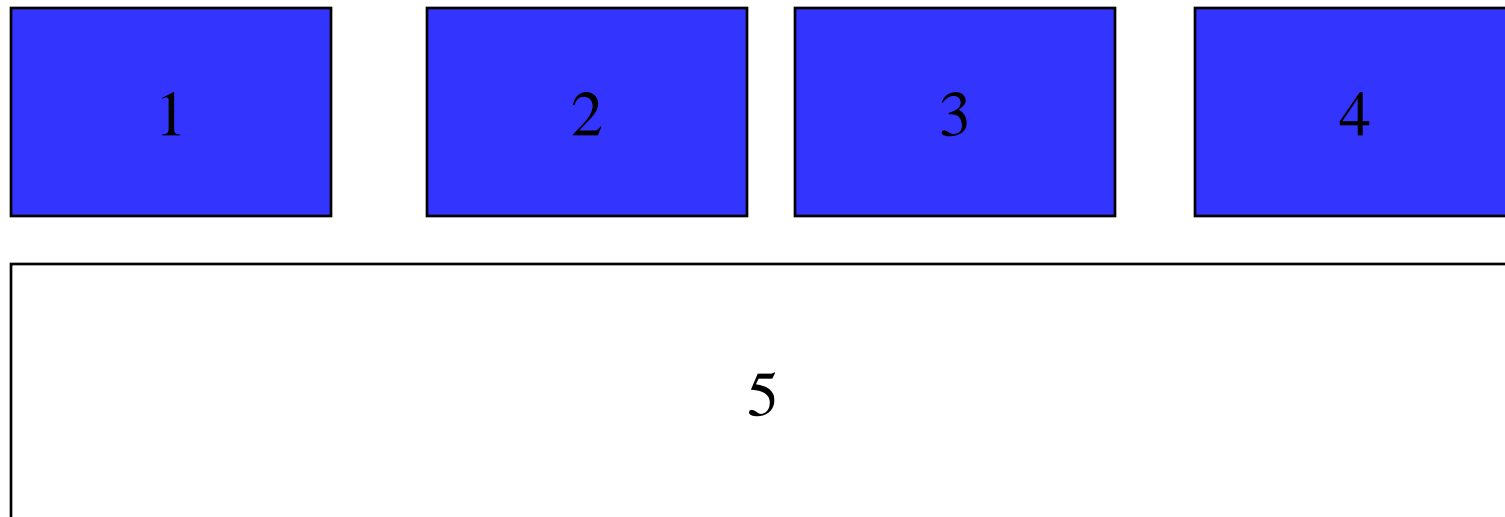
The Fourth Essentials of Project Management from the CMMI perspective

The Project Management Elements



Project Management methods situationally applied to manage the project throughout the project cycle

The Fifth Essentials of Project Management from the CMMI perspective



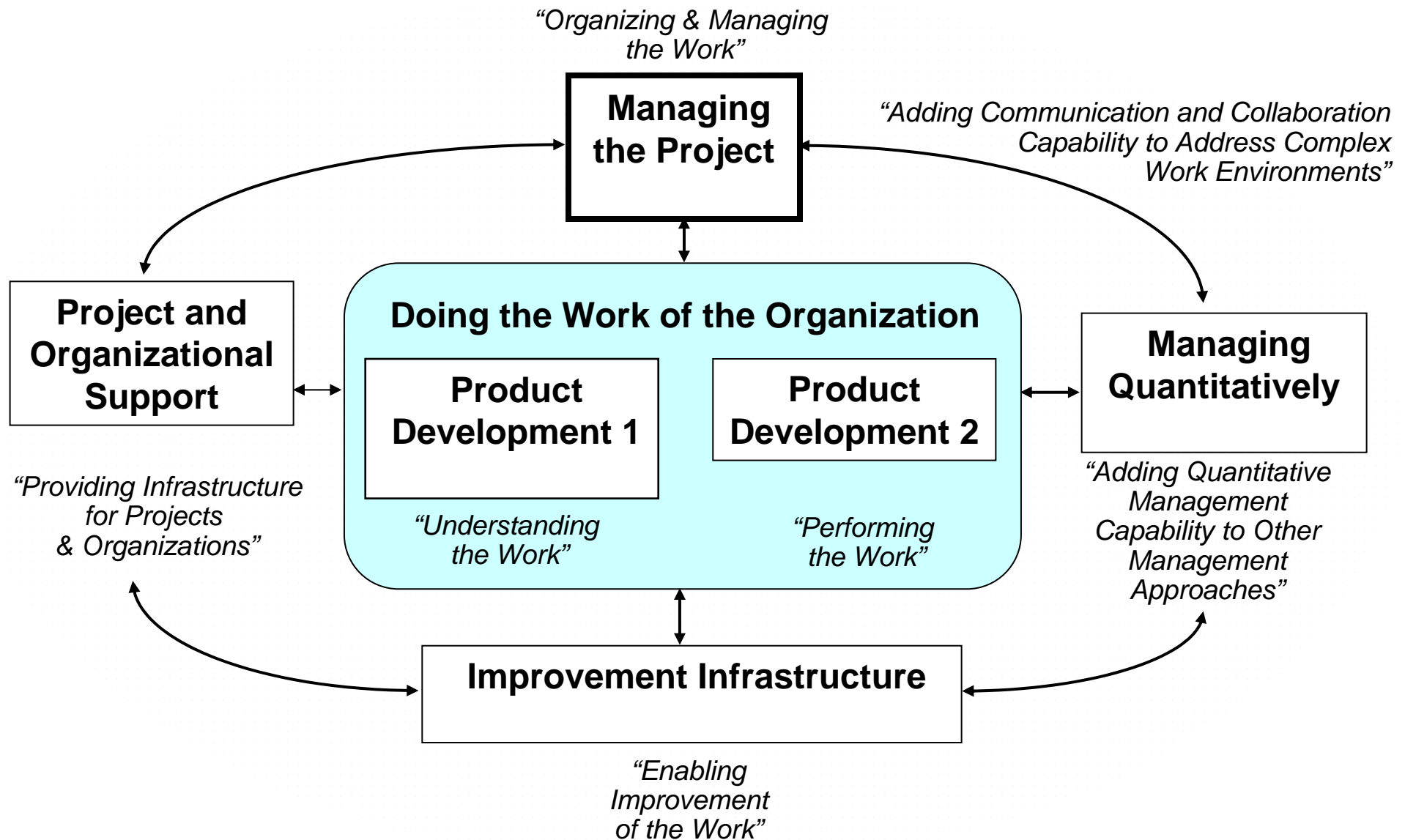
Organizational and Project Management
Commitment to the Process

Summary – The key to overall Project Management Success using the CMMI

- **Project Management provides a tool to improve organizational performance**
- **Crosses stove-piped isolated silos of expertise to create an integrated solution**
- **Project Management is most effective when embraced and supported as a discipline all levels**
- **The skills come over time or through training**

Project Management Concepts from the CMMI

Project Management for CMMI focuses on



Managing the Project Using CMMI Involves

- **Estimating the scope and work that needs to be performed**
- **Developing mechanisms to acquire identified products**
- **Developing a project plan**
- **Getting commitments to the plan**
- **Working with suppliers to acquire identified products**
- **Monitoring progress against the plan**
- **Identifying and analyzing risks**
- **Taking action to address significant deviations from the plan**
- **Taking action to appropriately mitigate risks**

Project Planning using the CMMI

Purpose:

Establish and maintain plans that define project activities.

When Project Planning Isn't Done Well... -1

Symptoms

- Poor estimates lead to cost and schedule overruns.
- There is an inability to discover deviations from undocumented plans.
- Resources are not available/applied when needed.
- There is an inability to meet commitments.
- Projects fail.

When Project Planning Isn't Done Well... -2

Why should we care? Because

- **Customers don't trust suppliers who waste their resources (i.e., loss of future business).**
- **No lessons learned for future projects means making the same mistakes on multiple projects.**
- **Unhappy customers, employees, and stockholders means a short life for the business.**
- **"If you fail to plan, then you plan to fail."**

CMMI Project Planning Goals

Establish Estimates

Estimates of project planning parameters are established and maintained.

Develop a Project Plan

A project plan is established and maintained as the basis for managing the project.

Obtain Commitment to the Plan

Commitments to the project plan are established and maintained.

The process area also has generic goals to support institutionalization.

Relevant Terminology

Project:

A managed set of interrelated resources that delivers one or more products to a customer or end user. This set of resources has a definite beginning and end and typically operates according to a plan.

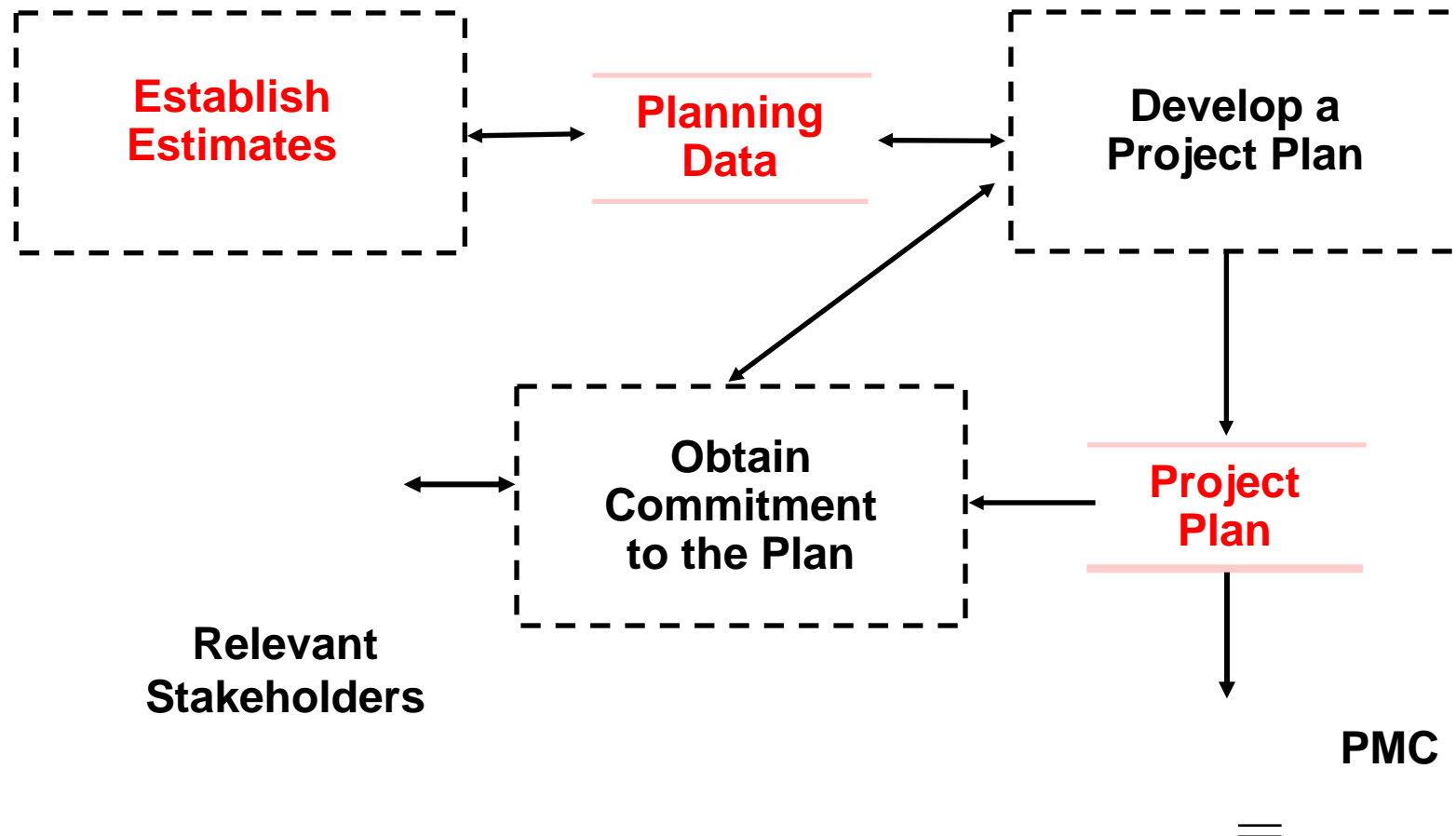
Program

(1) A project. (2) A collection of related projects and the infrastructure that supports them, including objectives, methods, activities, plans, and success measures.

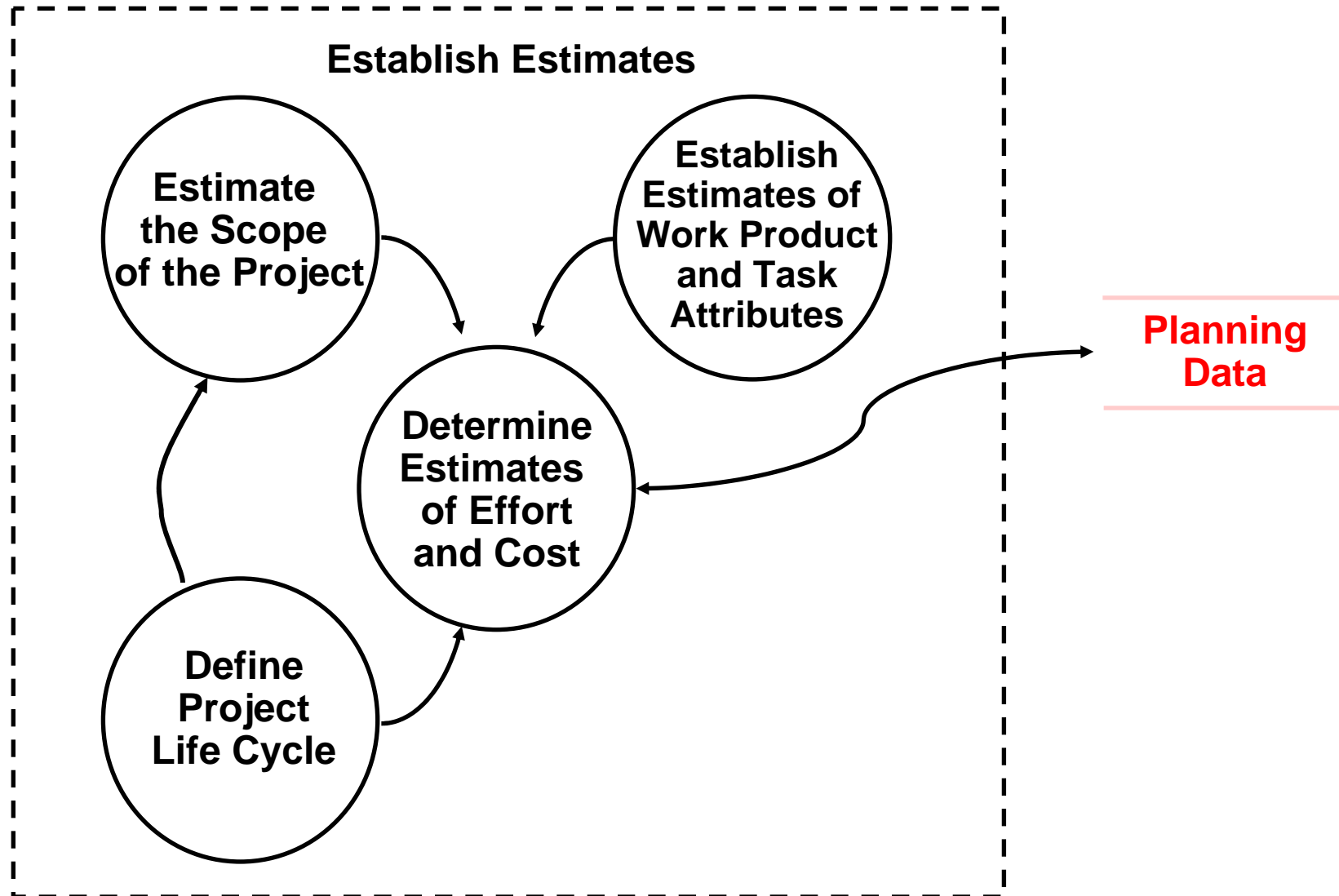
Work breakdown structure (WBS)

An arrangement of work elements and their relationship to each other and to the end product.

Project Planning Context -1

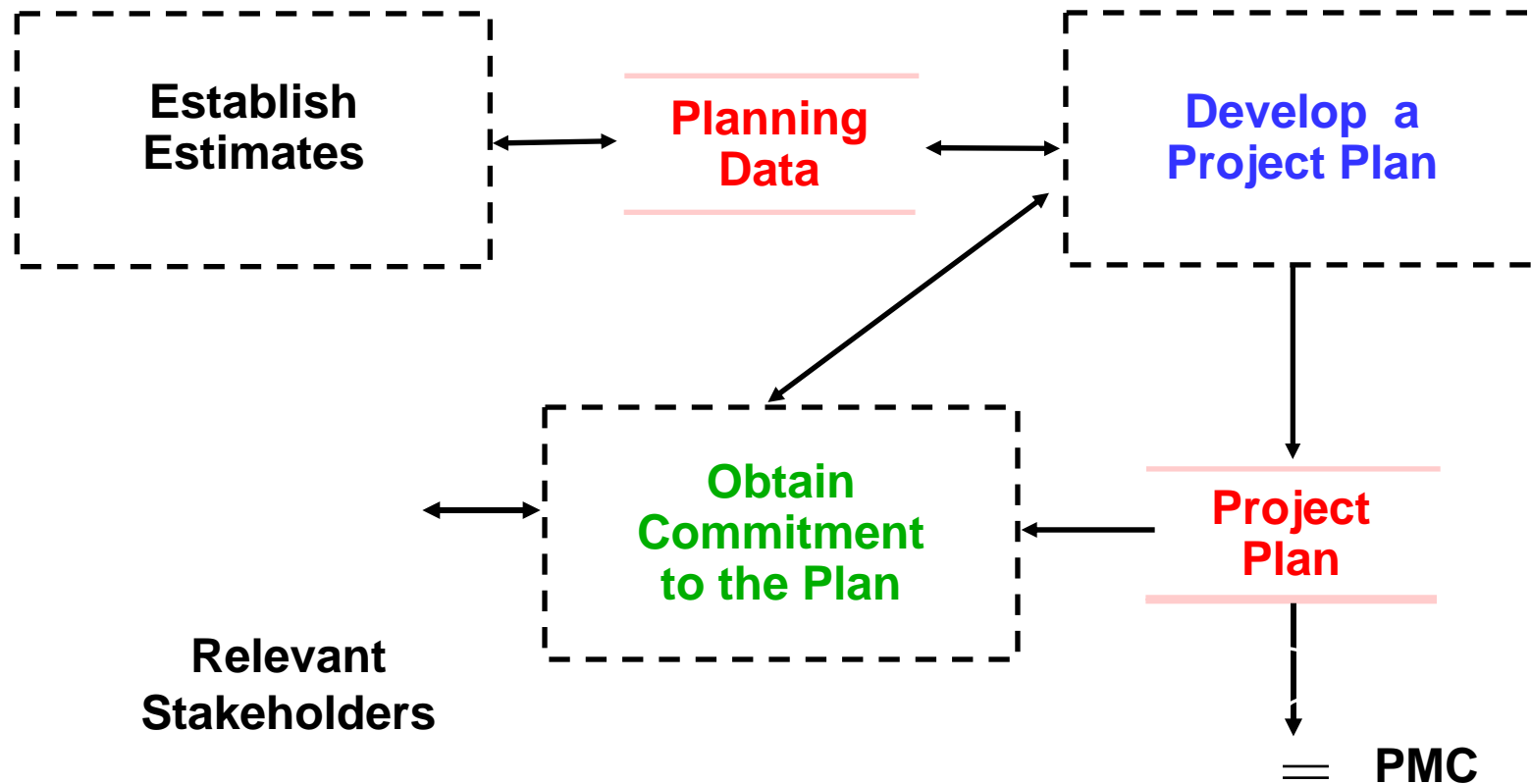


Project Planning Context -2



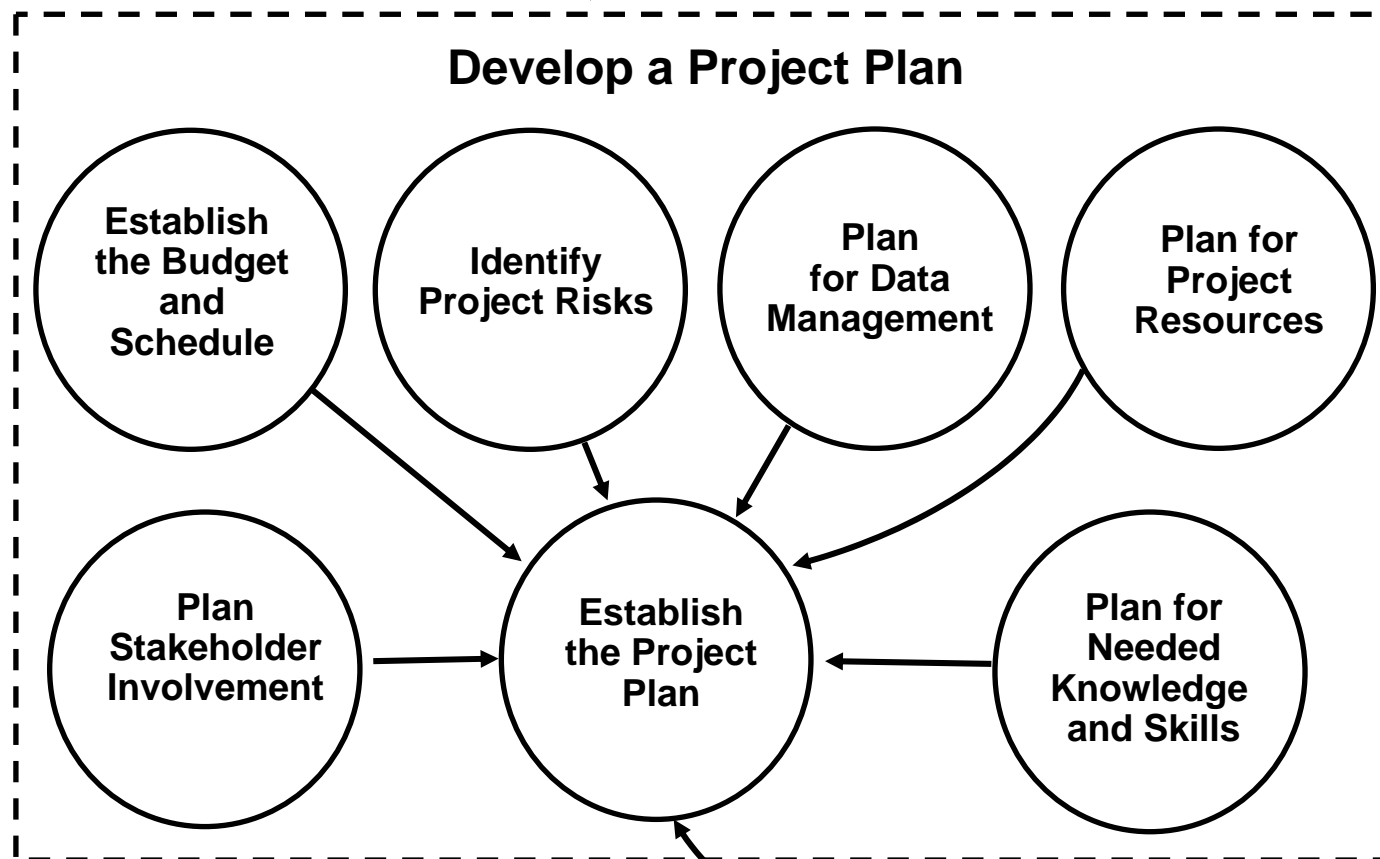
**Planning
Data**

Project Planning Context -3



Project Planning Context -4

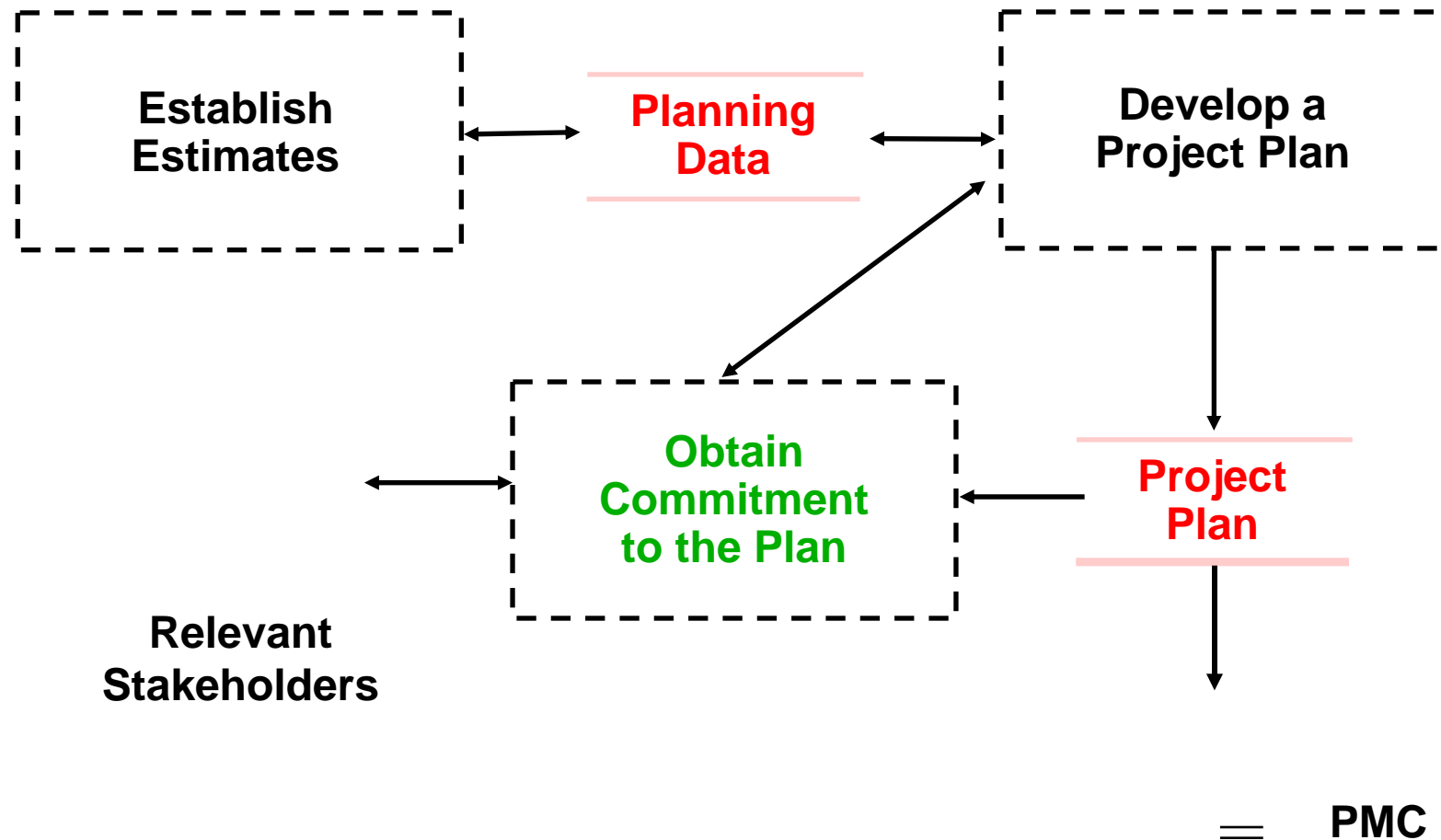
Planning Data



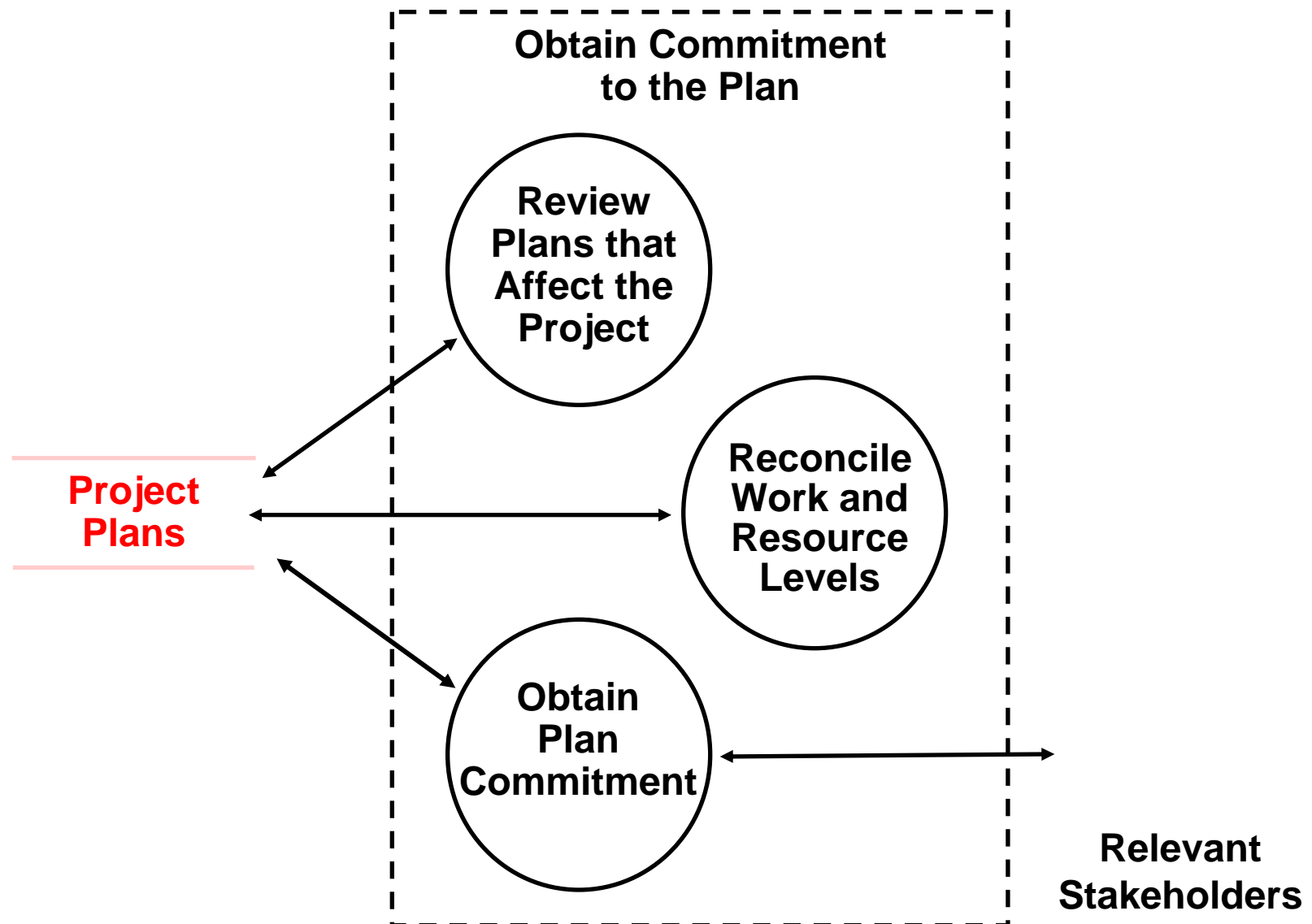
Project Plan

= PMC

Project Planning Context -5



Project Planning Context -6



Project Monitoring and Control

Purpose

Provide understanding of the project's progress so that appropriate corrective actions can be taken when the project's performance deviates significantly from the plan.

When Project Monitoring and Control Isn't Done Well... -1

Symptoms

- Lots of time is spent in meetings trying to discover project status rather than reporting on it.
- Data needed for management decisions is unavailable when needed.
- Actions that should have been taken early on aren't identified until it's too late.

When Project Monitoring and Control Isn't Done Well... -2

Why should we care? Because

- **If you don't know what's going on, corrective action can't be taken early when it's least expensive.**
- **Lack of management insight/oversight makes project results highly unpredictable, even later in the project.**
- **If your confidence in the status you give to your customer is low, they probably perceive it.**

Project Monitoring and Control Goals

SG 1: Monitor Project Against Plan

Actual performance and progress of the project are monitored against the project plan.

SG 2: Manage Corrective Action to Closure

Corrective actions are managed to closure when the project's performance or results deviate significantly from the plan.

The process area also has generic goals to support institutionalization.

Project Management Incorporates Risk Management

Risk Management

Purpose

Identify potential problems before they occur, so that risk-handling activities may be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives.

When Risk Management Isn't Done Well... -1

Symptoms

- If you are not tracking risks, it is easy to ignore them.
- Known risks to project staff are a surprise to management.
- Every time a new problem manifests, a new management technique is tried.

When Risk Management Isn't Done Well... -2

Why should we care? Because

- The project may escape some of the “bullets,” but not all of them.
- No lessons learned for future projects means making the same mistakes on multiple projects.
- Repeated project failures due to unforeseen (but predictable) risks costs you business, if not the whole company.

Managing the Project Summary

Project Planning and Project Monitoring and Control aid project managers in achieving project objectives by identifying practices that help in

- **planning project activities**
- **managing project performance according to the plan**
- **proactively identifying and reducing risks that may jeopardize achieving project objectives**
- **working with suppliers**

Any Questions or Comments?

